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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/414,518	10/08/1999	BRIAN YANG	EM/YANG/5037	3398

7590

11/07/2002

BACON & THOMAS
625 SLATERS LANE
4TH FLOOR
ALEXANDRIA, VA 22314

EXAMINER

GRIER, LAURA A

ART UNIT

PAPER NUMBER

2644

DATE MAILED: 11/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

704/250
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Office Action Summary

Application No.

09/414,518

Applicant(s)

YANG ET AL.

Examiner

Laura A Grier

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 5-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 13-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Objections

1. Claim 16 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 16 recites "power amplifier", which is claimed in claim 1.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-4, and 13-27** are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art in view of Kaneko et al. and further in view of Elam, U. S. Patent No. 6462264.

Regarding **claims 1, 16, 17, and 23** the applicant's admitted prior art discloses a voice data generator for inputting a plurality of multi-channel control signals, and a loudspeaker (figure 4). However, the applicant's admitted prior art fails to specifically disclose the limitation regarding the control signal for activating a channel selector to generate a time-division signal (time-division technique), wherein the selected signal are directly input to a voice generator; or a power amplifier. The examiner maintains that such a technique was well known in the art.

Regarding the time-division technique, in a similar field of endeavor, Kaneko et al. (Kaneko) discloses an electronic musical instrument. Kaneko's disclosure comprises means indicative on

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implementing a control signal for selecting a channel which includes a multiplexing means for providing time-division processing a music signal and voice signal, which indicative of the claimed limitations of the time-division technique and thus further discloses a power amplifier (figures 1 and 7, and col. 18, lines 19-51 and col. 29, lines 50-61), wherein the signal is outputted without demodulation.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of the applicant's admitted prior art by implementing the time-division technique for the purpose of reducing the size and complexity of such a system and enhancing the quality of the multi-channel audio output; and the power amplifier for the purpose of driving the output to the loudspeaker for greater audio quality and strength.

Regarding the signals being output to a voice generator after being selected, the applicant's admitted prior art and Kaneko fail to specifically disclose the signal output to a voice generator. In a similar field of endeavor, Elam discloses method and apparatus of using voice generators for a plurality of data and/or MIDI channels of voice sounds. Elam's disclosure includes a manual channel selection technique, wherein the selections are directly sent to a voice generator, wherein the voice data contained in the selected channel is synthesized and transformed into audio signals (col. 18, lines 44-67 and col. 14, lines 33-60, figures 10 and 14).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of the applicant's admitted prior art and Kaneko by providing a voice generator for input of the selected channels performed a time-division multiplexing for the purposes of enabling the voice data contained in the selected channel to be synthesized and transformed into audio signals as taught by Elam.

Regarding **claim 2**, the applicant's admitted prior art and Kaneko and Elam (hereafter, Kaneko) disclose everything claimed as applied above (see claim 1). The applicant's admitted prior discloses the

plurality of channels to use voices signals which constitutes as speech signals; as well Kaneko discloses a musical instrument which used musical tone which constitutes as melody.

Regarding **claim 3**, Kaneko discloses everything claimed as applied above (see claim 1). Kaneko further discloses the claimed limitation in col. 18, lines 19-67, wherein in the plurality of states of a channel the data can be a logic "1" or "0".

Regarding **claims 4 and 22**, Kaneko discloses everything claimed as applied above (see claim 1). It was well known for a single source to provide multi-channel signals. And thus, it would have been obvious to one of the ordinary skill in the art at time the invention was made to modify the invention of Kaneko by implement means of enhancing and/or control the volume of the multiple channels when being output as a single output and/or mixed prior to output.

Regarding **claims 13, 18, and 24**, Kaneko discloses everything claimed as applied above (see claim 1). Kaneko further discloses ad D/A conversion means (figures 1 and 7, and col. 18, lines 19-51 and col. 29, lines 50-61), wherein the signal is outputted without demodulation. Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of the applicant's admitted prior art by implementing the providing a enhancing the quality of the multi-channel audio output; a D/A conversion means for converting the digital output of the time-division circuit to analog;

Regarding **claim 15**, Kaneko discloses everything claimed as applied above. Kaneko's disclosure comprises means indicative on implementing a control signal for selecting a channel which includes a multiplexing means for providing time-division processing a music signal and voice signal, wherein the music signal contains envelope data, which indicative of the claimed limitations of the time-division technique and thus further a high speed counter and switching means (figures 1 and 7, and col. 18, lines 19-51 and col. 29, lines 50-61), wherein the signal is outputted without demodulation.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Kaneko by implementing the time-division technique for the purpose of reducing the size and complexity of such a system and enhancing the quality of the multi-channel audio output.

Regarding **claims 21 and 27**, Kaneko discloses everything claimed as applied above (see claims 17 and 23, respectively). Elam further discloses the selected channel may be synthesized in the voice generator, which constitutes mixing.

Regarding **claims 14, 19 and 25**, Kaneko discloses everything claimed as applied above (see claims 1, 17 and 23, respectively). The applicant's admitted prior art further discloses that voice generator may comprise a pulse width modulator.

Response to Arguments

Applicant's arguments with respect to claims 1-4 and 13- 27 have been considered but are moot in view of the new ground(s) of rejection.

The applicant basically argues that the prior art of record fails to specifically disclose the claimed invention in particular respect to the channel selection being output directly to a voice generator. The examiner has provided a new reference of prior art that supports channel selection being output directly to a voice generator and concepts of the invention in general.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura A Grier whose telephone number is (703) 306-4819. The examiner can normally be reached on Monday - Friday, 7:30 am - 4:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,
Forester W. Isen can be reached on (703) 305-4386.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

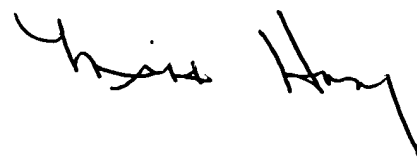
(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington,
VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should
be directed to the receptionist whose telephone number is (703) 305-4700.

LAG

November 4, 2002



**MINSUN OH HARVEY
PRIMARY EXAMINER**